

**Amendments to the Specification**

At the end of the specification, on a separate sheet, add the following paragraph:

**Abstract**

An electronic motor monitoring system comprising an antenna, a data sampling means and a data processing means. In one embodiment, the system employs the antenna to detect high frequency arcing events within the electric motor that can thereafter be mapped so as to provide a means for motoring, recording and diagnosing a variety of electric motor operating and fault conditions. In another embodiment, the antenna design allows for the suppression of background electrical noise so improving the signal to noise ratio of the detected signals. In yet another embodiment, the system provides a facility for optimizing the alignment, and monitoring the efficiency of, the electrical and mechanical components of the electric motor.